(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization International Bureau





(43) International Publication Date 27 January 2005 (27.01.2005)

PCT

(10) International Publication Number WO 2005/008900 A1

(51) International Patent Classification7:

1284 12/16

H03M 13/15

(21) International Application Number:

PCT/IB2004/002623

(22) International Filing Date:

21 July 2004 (21.07.2004)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data: 0308868

21 July 2003 (21.07.2003) FR

- (71) Applicant (for all designated States except US): CANON KABUSHIKI KAISHA [JP/JP]; 3-30-2, Shimomaruko, 3-chome, Ohta-ku, Tokyo (JP).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): PIRET, Philippe [BE/FR]; 4, boulevard des Métairies, F-35510 Cesson-Sevigne (FR). LE BARS, Philippe [FR/FR]; 12, rue du Manoir, F-35235 Thorigne-Fouillard (FR). LEHOBEY, Frédéric [FR/FR]; 185, rue des Fougères, F-35700 Rennes (FR).
- (74) Agent: PETIT, Maxime; Santarelli, 14, avenue de la Grande Armée, F-75017 Paris (FR).

- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, IT, GB, GD, GE, GH, GM, HR, HU, ID, HL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Declarations under Rule 4.17:

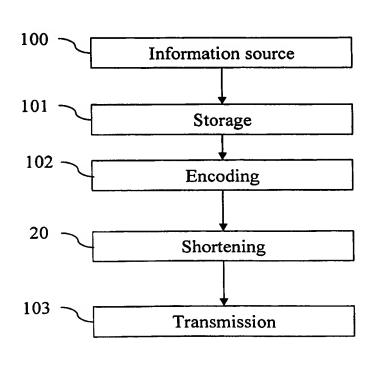
- of inventorship (Rule 4.17(iv)) for US only
- of inventorship (Rule 4.17(iv)) for US only

Published:

with international search report

[Continued on next page]

(54) Title: INFORMATION ENCODING BY SHORTENED REED-SOLOMON CODES



The present invention (57) Abstract: concerns an encoding method in which encoding is performed of any information word a of length k in the form of a word v'belonging to a Reed-Solomon code C of dimension k' and length n' (with n'-k'=n- k) such that the components of v' situated in (n'-n) arbitrary predetermined positions be systematically equal to respective predetermined constants (for example, The possibility then exists of all zero). deleting those components of fixed value to obtain a word ν of length n belonging to a code C, which thus constitutes a code that is shortened with respect to code C. The invention also relates to devices and apparatuses adapted to implement the encoding method. The invention may be used for encoding by means of an algebraic geometric code, when such encoding may be implemented by encoding by means of a plurality of shortened Reed-Solomon codes.

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.